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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/623,417

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Sachin Navin Chheda

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06/01/2006

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EXAMINER

SUGENT, JAMES F

ART UNIT

PAPER NUMBER

2116

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/623,417	CHHEDA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	James Sugent	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003 and 15 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This Office Action is sent in response to Applicant's Communication received March 15, 2006 for application number 10/623417 originally filed July 18, 2003. The cancellation of minor  
5 claim 4 by the Applicant has been noted.

#### *Claim Rejections - 35 USC § 102*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10 Claims 1-3 and 5-23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fung (U.S. Patent Publication No. 2002/0004912 A1) (hereinafter referred to as Fung) (cited by Applicant).

As to claim 1, Fung discloses a system for power management of a rack (Fung clearly comprises a "rack of computers" in that each server module [54] comprises a computer found  
15 within a server rack [paragraph 40]. The Examiner asserts that each individual chassis unit [55 comprising of 53 and 54; paragraph 41] comprising of a management module [management module(s) 53] and computers [server module(s) 54] is a "server rack") of computers, the system comprising: server side infrastructure (SSI) circuitry (server module 402) at each computer in the rack, the SSI circuitry including local monitoring circuitry (activity indicator generator 406)  
20 coupled (via Link as shown in figure 12) to a central processing unit (CPU) (CPU 404) of the computer (paragraph 104, lines 4-15 and paragraph 107, lines 24-35); and, a centralized power management module (CPMM) (management module 430) (The word "centralized" in CCPM

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was emphasized by the Applicant but, is considered a moot point since each computer [54] within the rack [as discussed hereinabove] are centralized to the individual chassis unit [55 comprising of 53 and 54; paragraph 41]. The Examiner further argues that the individual chassis unit [55] of Fung is capable of being managed by one or two CCPMs [management modules 53] and therefore is capable of having one centralized CCPM; [paragraph 40]) with as out-of-band management link (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]) to the SSI circuitry (server module 402) at each computer in the rack (paragraph 107, 21-32), wherein the local circuitry (activity indicator generator 406) at each computer in the rack monitors power consumption at the CPU (404) and transmits power consumption data (activity indicator data structure 410) to the CPMM (management module 430; paragraphs 104 and 105), and wherein the CPMM (management module 430) applies a set of rules (power saving modes are first introduced in paragraph 107; however, power saving rules are covered in detail in paragraphs 190-247) to the power consumption data (activity indicator data structure 410) to determine when and at which computers to enable and disable a CPU power throttling mode (paragraphs 107 and 108).

As to claim 2, Fung discloses a system wherein the rack of computers (server modules 54) comprises multiple servers mounted in the rack (paragraph 40).

As to claim 3, Fung discloses a system wherein the rack of computers comprise a plurality of blade servers (server modules 54) in a blade chassis (as shown in figure 2; paragraph 40).

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As to claim 5, Fung discloses a system further comprising: a console (138) coupled to the CPMM (management module 430) for user interaction (paragraphs 50, 100 and 189).

As to claim 6, Fung discloses a system wherein the console comprises a console (138) connected locally (via bus 140 or 142) to the CPMM (paragraphs 50 and 100).

5 As to claim 7, Fung discloses a system wherein the console comprises a remote console (136) coupled via a network (through the internet 132 via connection 134) to the CPMM (paragraph 126).

As to claim 8, Fung discloses a system wherein the system is configured to enable a user to setup the aforementioned rules by way of the console (paragraphs 50, 100 and 189).

10 As to claim 9, Fung discloses a system wherein the system is configured to enable a user to view power consumption data by way of the console (paragraphs 50, 100 and 189).

As to claim 10, Fung discloses a system further comprising: additional CPMMs (one or more management modules 53 in figure 2) with management links (Link as shown in figure 12) to SSI circuitry (server modules 54) at additional racks of computers (Fung discloses additional  
15 groups of computers referred to as server system units 52; paragraph 40); and a power management system coupled to the plurality of CPMMs (paragraphs 42 and 104-107).

As to claim 11, Fung discloses a system wherein the power management system is configured to enable a user to view power consumption data and to customize the sets of rules applied by the CPMMs (paragraphs 50, 100 and 189).

20 As to claim 12, Fung discloses a server-side apparatus for a rack-mounted computer, the apparatus comprising: a local monitoring circuitry (activity indicator generator 406) coupled to a central processing unit (CPU) (CPU 404 of server module) of the computer and coupled (via

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Link as shown in figure 12) to a centralized power management system (The word “centralized” in centralized mower management system was emphasized by the Applicant but, is considered a moot point since each computer [54] within the rack [as discussed hereinabove] are centralized to the individual chassis unit [55 comprising of 53 and 54; paragraph 41]. The Examiner further

5 argues that the individual chassis unit [55] of Fung is capable of being managed by one or two CCPMs [management modules 53] and therefore is capable of having one centralized CCPM; [paragraph 40]) which is configured to manage power for a rack of computers (server module control algorithm and unit 432 of management module 430; paragraph 104) (Fung clearly comprises a “rack of computers” in that each server module [54] comprises a computer found

10 within a server rack [paragraph 40]. The Examiner asserts that each individual chassis unit [55 comprising of 53 and 54; paragraph 41] comprising of a management module [management module(s) 53] and computers [server module(s) 54] is a “server rack”), wherein the local circuitry (activity indicator generator 406) is configured to monitor power consumption (activity monitoring) at the CPU (404), transmit power consumption data (activity indicator data structure

15 410) to the centralized power management system (management module 430; paragraph 104, lines 7-22), receive out-of-band management (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]) messages from the centralized power management system, and send commands to enable and disable a

20 power throttling mode at the CPU (404) (paragraph 107).

As to claim 13, Fung discloses an apparatus further comprising: a power measurement link (Link as shown in figure 12) between the local monitoring circuitry (activity indicator

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generator 406) and the CPU (CPU of management module 430 via server module control algorithm and unit 432) for monitoring power consumption at the CPU (paragraph 107, 24-35).

As to claim 14, Fung discloses an apparatus further comprising: an interrupt line (Link as shown in figure 12) between the local monitoring circuitry (activity indicator generator 406) and the CPU (CPU of management module 430) for transmitting interrupt messages that enable and disable the power throttling mode at the CPU (paragraph 107).

As to claim 15, Fung discloses an apparatus further comprising: a special register (frequency control register 205) writable by the local monitoring circuitry (activity monitor of CPU 201) and readable by the CPU to enable and disable the power throttling mode at the CPU (paragraph 122).

As to claim 16, Fung discloses a central power management apparatus for a rack of computers (server modules 54) (Fung clearly comprises a “rack of computers” in that each server module [54] comprises a computer found within a server rack [paragraph 40]. The Examiner asserts that each individual chassis unit [55 comprising of 53 and 54; paragraph 41] comprising of a management module [management module(s) 53] and computers [server module(s) 54] is a “server rack”), the apparatus comprising: a management module (management module 430) coupled via an out-of-band link (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]) to local monitoring circuitry (activity indicator generator 406) at each computer in the rack (paragraph 40), wherein the management module (management module 430) is configured to receive power consumption data (activity indicator data structure 410) from the local monitoring circuitry (activity indicator

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generator 406), determine at which computers to enable and disable a CPU power throttling mode, and transmit messages to said determined computers to enable and disable the CPU power throttling mode (paragraph 107).

As to claim 17, Fung discloses a method for power management of a rack of computers (server modules 302) (Fung clearly comprises a “rack of computers” in that each server module [54] comprises a computer found within a server rack [paragraph 40]. The Examiner asserts that each individual chassis unit [55 comprising of 53 and 54; paragraph 41] comprising of a management module [management module(s) 53] and computers [server module(s) 54] is a “server rack”), the method comprising: monitoring power consumption (activity monitoring in CPU 320) at each computer (server module 302) in the rack (paragraph 104 and 110-113); and transmitting power consumption data (activity indicator data structure 410; paragraph 104) from each computer in the rack to a single centralized power manager (server module algorithm and unit 432 of management module 316; paragraph 104 and 110-113) (The word “centralized” in CCPM was emphasized by the Applicant but, is considered a moot point since each computer [54] within the rack [as discussed hereinabove] are centralized to the individual chassis unit [55 comprising of 53 and 54; paragraph 41]. The Examiner further argues that the individual chassis unit [55] of Fung is capable of being managed by one or two CCPMs [management modules 53] and therefore is capable of having one centralized CCPM; [paragraph 40]) with as out-of-band management link (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]).



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As to claim 18, Fung discloses a method further comprising: transmitting messages via an out-of-band link (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]) from the centralized power manager (management module 316) to local circuitry (core logic 330 containing power management unit 332) at said determined computers (server modules 302) to enable and disable the CPU (320) power throttling mode at those computers (paragraphs 107 and 110-113); and applying a configurable set of rules (paragraph 189) to the power consumption data (activity indicator data structure 410) to determine at which computers to enable and disable a CPU power throttling mode (paragraphs 107 and 110-113).

As to claim 19, Fung discloses a method wherein the rack of computers comprises a rack of servers (rack mounted server system 50).

As to claim 20, Fung discloses a centralized method for managing power consumption of a rack of computers (Fung clearly comprises a “rack of computers” in that each server module [54] comprises a computer found within a server rack [paragraph 40]. The Examiner asserts that each individual chassis unit [55 comprising of 53 and 54; paragraph 41] comprising of a management module [management module(s) 53] and computers [server module(s) 54] is a “server rack”), the method comprising: receiving power consumption data (activity indicator data structure 410) via an out-of-band link (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]) from local monitoring circuitry (activity indicator generator 406) at each of the computers in the rack

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(paragraph 104); determining at which computers to enable and disable a CPU power throttling mode (paragraph 107); and transmitting messages via the out-of-band link to said determined computers to enable and disable the CPU power throttling mode (paragraph 107, 21-35).

5 As to claim 21, Fung discloses a method wherein the rack of computers comprises a rack of servers (paragraph 40).

As to claim 22, Fung discloses a power management apparatus for managing power usage of a rack of computers (Fung clearly comprises a “rack of computers” in that each server module [54] comprises a computer found within a server rack [paragraph 40]. The Examiner asserts that each individual chassis unit [55 comprising of 53 and 54; paragraph 41] comprising  
10 of a management module [management module(s) 53] and computers [server module(s) 54] is a “server rack”), the apparatus comprising: means for (Link as shown in figure 12) receiving power consumption data (activity indicator data structure 410) from the local monitoring circuitry (activity indicator generator 406; paragraphs 107-110); means for (server module control algorithm and unit 432) determining at which computers to enable and disable a CPU  
15 power throttling mode (paragraph 107); and means for (Link as shown in figure 12) transmitting messages to said determined computers to enable and disable the CPU power throttling mode (paragraphs 107-110).

As to claim 23, Fung discloses an apparatus wherein the means for transmitting messages comprise out-of-band links to the local monitoring circuitry (Again using the server rack  
20 argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]).

***Response to Arguments***

Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

5

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37  
15 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the  
20 examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The examiner can normally be reached on 8AM - 4PM.

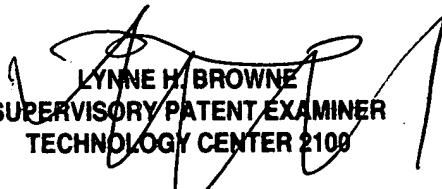
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

- 5 Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

- 10 James Sugent  
Patent Examiner, Art Unit 2116  
May 10, 2006

  
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SUPERVISORY PATENT EXAMINER  
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